A Formal Synthesis of Atorvastatin

**Significance:** The key step in this formal synthesis of atorvastatin (Lipitor®) is the enantioselective intramolecular oxa-Michael reaction of A mediated by 10 mol% of benzothiadiazine catalyst B. Methods for converting G and its relatives into atorvastatin have been summarized by Y. Kawato et al. (Chem. Eur. J. 2013, 19, 3802; see also references therein).

**Comment:** For the conversion of N-nitrosamides into esters (e.g., D → E), see: D. T. Glatzhofer, R. Roy, K. N. Cossey Org. Lett. 2002, 4, 2349. Phenolic nucleophiles (14 examples) also participate in the oxa-Michael reaction, and in the case of H only 1 mol% of catalyst I is required.